Release notes for ENDF/B Development n-051_Sb_124 evaluation

April 26, 2017

- `psyche` Warnings:
  1. Non-threshold reaction with Q value differing from PSYCHE's expectations
     FILE 3 / SECTION 103 / THE CALCULATED Q 1.28038E+06 DISSAGREES WITH THE GIVEN Q 1.40906E+06 (0): Iffy Q

```
FILE  3
   SECTION 103
            THE CALCULATED Q  1.28038E+06 DISSAGREES WITH THE GIVEN Q  1.40906E+06
```

- `recent` Warnings:
  1. Fission widths given for non-fissile nucleus, but are zero
     0: Fission?

```
 Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
 ==========================================================================
 Retrieval Criteria-----------        MAT
 File 2 Mimimum Cross Section- 1.0000E-10 (Standard Option)
 Reactions with No Background-     Output (Resonance Contribution)
... [759 more lines]
```

- `fudge-4.0` Warnings:
  1. Cross section does not match sum of linked reaction cross sections
     crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 1.01%
```

- `fudge-4.0` Errors:
  1. Calculated and tabulated Q values disagree.
     reaction label 3: n[multiplicity:'2'] + Sb123 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -6020531.441894531 eV vs -6.472e6 eV!
```

  2. Calculated and tabulated Q values disagree.
     reaction label 4: n[multiplicity:'3'] + Sb122 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -14985786.0098877 eV vs -1.54423e7 eV!
```

  3. Calculated and tabulated Q values disagree.
     reaction label 5: n + H1 + Sn123 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -6641823.374725342 eV vs -7086030. eV!
```

  4. Calculated and tabulated Q values disagree.
     reaction label 6: n + H2 + Sn122 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -10363099.03878784 eV vs -1.0727e7 eV!
```

  5. Calculated and tabulated Q values disagree.
     reaction label 7: n + H3 + Sn121 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -12919057.05744934 eV vs -1.33622e7 eV!
```

6. Calculated and tabulated Q values disagree.
   reaction label 8: Sb125 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 9153491.195236206 eV vs 8710090. eV!
```

7. Calculated and tabulated Q values disagree.
   reaction label 9: n + He4 + In120 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -3863169.255142212 eV vs -4335280. eV!
```

8. Calculated and tabulated Q values disagree.
   reaction label 10: H1 + Sn124_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 1845771.292373657 eV vs 1409060. eV!
```

9. Calculated and tabulated Q values disagree.
   reaction label 11: H2 + Sn123_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -4417257.273788452 eV vs -4775910. eV!
```

10. Calculated and tabulated Q values disagree.
    reaction label 12: H3 + Sn122_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -4105866.098175049 eV vs -4541860. eV!
```

11. Calculated and tabulated Q values disagree.
    reaction label 13: He4 + In121_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 4314139.155944824 eV vs 3.8828e6 eV!
```

- `njoy2012` Warnings:

1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 16
                          only mf4/mf5 provided
```

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 17
                          only mf4/mf5 provided
```

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 22
                          only mf4/mf5 provided
```

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 28
                          only mf4/mf5 provided
```

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 32
                          only mf4/mf5 provided
```

6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (5): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 33
                          only mf4/mf5 provided
```

7. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (6): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 91
                          only mf4/mf5 provided
```